

**REMARKS**

This is intended as a full and complete response to the Office Action dated July 6, 2007, having a shortened statutory period for response extended one month and set to expire on November 6, 2007. Please reconsider the claims pending in the application for reasons discussed below.

***Claim Objections***

Claims 14, 21, 31 and 32 stand objected to because of informalities. As requested by the Examiner, Applicants have amended the claims to not depend from polypeptide claims which are drawn to non-elected subject matter. Accordingly, Applicants request withdrawal of the objection with respect to claims 14, 21, 31 and 32.

Claims 1-3 stand objected to because of informalities. In response, Applicants choose to leave in non-elected subject matter at this time for further prosecution once the elected subject matter is found allowable. See, MPEP § 803.02. While Applicants acknowledge advisement regarding the claims containing non-elected subject matter, no requirement exists for deletion of the non-elected subject matter from the claims. Accordingly, Applicants request withdrawal of the objection with respect to claims 1-3.

***Claim Rejections - 35 U.S.C. § 112***

Claims 14, 21, 31 and 32 stand rejected under 35 U.S.C. § 112, second paragraph. In response, Applicants have amended these claims to correct all antecedent basis issues and to render the claims more clear in accordance with the Examiner's comments. Accordingly, Applicants request withdrawal of the § 112 rejection of claims 14, 21, 31 and 32.

***Claim Rejections - 35 U.S.C. § 102***

Claims 1, 4, 6 and 33 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Inouye et al.* (FEBS Letters, 341, 277-280, 1994, cited in the IDS). In response, Applicants respectfully traverse the rejection.

First, *Inouye et al.* discloses three sequences in Figure 1 that all have E present at position 222. Further, there is no indication in *Inouye et al.* of any substitution at position 222. Therefore, *Inouye et al.* fails to teach G instead of E (i.e., E222G) contrary to the Examiner's statement.

Claim 1 recites that a nucleic acid sequence encodes a genetically engineered mutant of an *Aequorea coerulescens* non-fluorescent protein, wherein the mutant comprises "an amino acid sequence at least 96% identical to the *Aequorea coerulescens* non-fluorescent protein of SEQ ID NO: 2." However, teachings of *Inouye et al.* lack any indication of such claimed similarity. Divergence in sequences of green fluorescent protein of *Aequorea victoria* and the non-fluorescent protein of *Aequorea coerulescens* differentiate the two species. *Inouye et al.* discloses modification of *Aequorea victoria* green fluorescent protein, thereby altering fluorescence of the protein. This altering fluorescence of one species (*Aequorea victoria*) is materially different than turning a non-fluorescent protein of a different species (*Aequorea coerulescens*) into a fluorescent protein, which makes possible development of fluorescent proteins from a different source and with different properties compared to *Aequorea victoria* green fluorescent protein.

Furthermore, the Examiner states that "it is believed that by changing the alignment parameters *Inouye's* sequence can be shown to encode a polypeptide sequence having 95% identity to SEQ ID NO: 2." However, "the 94.4% identity" cited by the Examiner fails to anticipate 96%, as recited in claim 1. Moreover, the Examiner merely speculates without showing any evidence that even 95% (e.g., previous claim 33) identity to SEQ ID NO: 2 is achievable whether or not the alignment hypothetically depends on alignment parameters. It is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record as the principal evidence upon which a rejection is based. *In re Zurko*, 258 F.3d 1379, 1385 (Fed. Cir., 2001); MPEP § 2144.04. Sequence alignment results may be dependent on alignment parameters but are not always, such as is especially true for fluorescent protein homologues due to specific chromophore regions. Further, attempts to change the alignment likely results in shifting of the specifically recited residues/substitutions claimed, thereby making any such comparison improper.

Therefore, *Inouye et al.* fails to teach, show or suggest each and every element of claim 1 and cannot anticipate claim 1 or any claims dependent thereon. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of claims 1, 4 and 6.

Claims 1-2, 4-7, 11, 14, 18, 21 and 33 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Stubbs et al.* (U.S. Patent No. 6,919,186, issued 7/2005). In response, Applicants respectfully traverse the rejection.

Claim 1 recites that a nucleic acid sequence encodes a genetically engineered mutant of an *Aequorea coerulescens* non-fluorescent protein, wherein the mutant comprises "an amino acid sequence at least 96% identical to the *Aequorea coerulescens* non-fluorescent protein of SEQ ID NO: 2." However, *Stubbs et al.* teaches modification of *Aequorea victoria* green fluorescent protein, like *Inouye et al.* discussed above, without any indication that sequences corresponding to the modified *Aequorea victoria* taught in *Stubbs et al.* provide the claimed similarity to another species (*Aequorea coerulescens*). Showing that the sequences disclosed in *Stubbs et al.* corresponding to modified *Aequorea victoria* displays 93.7% identity to SEQ ID NO:2 fails to anticipate 96%, as recited in claim 1. As discussed above, speculation regarding possible dependencies on alignment parameters cannot properly form the basis for a rejection of even 95% (e.g., previous claim 33). Therefore, *Stubbs et al.* fails to teach, show or suggest each and every element of claim 1 and cannot anticipate claim 1 or any claims dependent thereon. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of claims 1-2, 4-7, 11, 14, 18 and 21.

#### **Allowable Subject Matter**

Claims 3, 24, 25 and 29 (directed to SEQ ID NO: 12 species only) are objected to as being dependent upon a rejected base claim. In response, Applicants submit that these claims are allowable based at least on the traversal presented herein regarding claim 1 from which these claims depend. Accordingly, Applicants request withdrawal of the rejection and allowance of claims 3, 24, 25 and 29.

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New claim 34 includes the subject matter of previous claim 3 (directed to SEQ ID NO: 12 species only), which the Examiner indicated would be allowable. Further, claim 34 includes no new matter. Accordingly, Applicants request allowance of claim 34.

**Conclusion**

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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